

Application No. 09/593,761
Amdt. dated September 29, 2003
Reply to Office Action of March 28, 2003
Docket No. 8001-1133

REMARKS

Figures 11-15 are resubmitted herewith, bearing the legend "PRIOR ART", consistent with the description in the specification, and per the suggestion made at Item 2 of the Official Action.

Claims 9-13 are cancelled herewith, without prejudice or disclaimer of the underlying subject matter thereof. The cancellation of claims 9-13 of course obviates the rejection applied at Item 7 of the Official Action.

New claims 18 and 19 are added by the present amendment, directed to further features of novelty of the present invention.

Applicant notes with appreciation the indication of allowable subject matter in claims 6-8. For the reasons discussed below, it is believed that the remaining pending claims 1-5 and 14-17 are likewise allowable relative to the applied prior art.

Turning now to the remaining issues raised in the Official Action, claims 1 and 2 were rejected under 35 USC §102(b) as allegedly being anticipated by NOMURA et al. 5,739,934. That rejection is respectfully traversed, for the following reasons.

The device described in NOMURA et al. (1-1, 10-1, 2-1) does not embody "a device for reducing mutual interference among

a plurality of wavelength channels" as recited in claim 1. The frame generating units 1-1 of NOMURA et al. process main signals into transmission frames, the channel marker-generating units 10-1 convert IDs into channel marker signals and supply them to frame-generating units, and the E/O converters 2-1 convert electrical signals into light wave signals.

Thus, NOMURA et al. merely disclose a wavelength division multiplexing light wave transmission system which can decrease the types of elemental hardware and use one kind of elemental hardware for each function of the system to transmit and receive n channels of the WDM light wave simultaneously (column 1, lines 34-41). In NOMURA et al., since the channel of the received signal is confirmed by detecting the channel marker derived from the received signal which is obtained by sweeping the characteristic of the wavelength tunable filter, the signal of the correct channel can be received, even if the accuracies of the selected wavelength of the filter and filter control signal are poor (column 5, lines 36-42). Indeed, NOMURA et al. do not mention reducing mutual interference at all.

It is therefore believed that the rejection of claims 1 and 2 for anticipation based on NOMURA et al. should be withdrawn.

Claims 3-5 were rejected under 35 USC §103(a) as allegedly being unpatentable over NOMURA et al. in view of HADANO

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(EP 0543327). That rejection is also respectfully traversed, for the following reasons.

Whereas the Official Action acknowledges that NOMURA et al. do not disclose the units of instant claim 3 and the frame phase updating unit of instant claim 4, applicant notes, in addition, that NOMURA et al. do not disclose or suggest "keeping the correlation of data patterns among channels to the low level, a stable transmitting quality assurance, and preventing large cross phase modulation and cross the gain modulation from occurring when the correlation of data patterns among channel is strong". The object of NOMURA et al.'s system is merely to use one basic type of hardware for each function of the system to transmit and receive n channels of the WDM lightwave simultaneously (column 1, lines 34-41). NOMURA et al. do not mention any correlation of data patterns among channels.

On the other hand, HADANO discloses a frame phase updating unit. However, HADANO discloses a synchronous optical multiplexing system having an STM-m (Synchronous Transport Module signal). HADANO merely discloses a frame phase updating unit for varying a frame phase of STM-m signals (column 1, lines 1-7). As shown in Figure 3 in HADANO, STM signal is time-division multiplexing which is a different technology from a wavelength-division in claims 3 and 4.

It would not have been obvious to incorporate the frame phase updating unit of HADANO in the system of NOMURA et al., because NOMURA et al. do not suggest the occurrence of mutually differing transmitting frame phases.

For the foregoing reasons, it is believed that claims 3-5 are allowable relative to the proposed combination of NOMURA et al. in view of HADANO.

At Item 8 of the Official Action, claims 14-17 were rejected under 35 USC §103(a) as being allegedly being unpatentable over NOMURA et al. in view of ARAKI et al. 6,441,935. That rejection is also respectfully traversed, for the following reasons.

ARAKI et al. disclose a dummy packet input unit including a dummy packet generator to supply an optical switch (column 14, lines 57-65). However, ARAKI et al. disclose a dummy packet for an optical packet exchange apparatus, which is a different technology from transmitting through a same optical fiber transmitting line. As mentioned above, because NOMURA et al. do not have any suggestion of mutually differing transmitting frame phases, it would not have been obvious to incorporate the dummy packet input of ARAKI et al. in the system of NOMURA et al.

From the above, it is believed also to be apparent that claims 14-17 are allowable relative to the proposed combination

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of references applied against those claims in the outstanding Official Action.

As is evident from the above discussion, one purpose of the invention is to reduce inter-channel correlation among a plurality of wavelength channels which are transmitted in parallel in an optical transmitting line. The references applied in the outstanding official action have different purposes and effects from those of the present invention. An important distinction between the present invention and the applied references is the absence in those references of a device to reduce inter-channel correlation. Various aspects of the invention include, as the device to reduce inter-channel correlation, a device to differentiate 1) frame phases (claims 4-7), 2) scrambling pattern (claims 9-13), and 3) dummy data pattern (claims 14-17) between at least two wavelength channels.

In view of the present amendment and the foregoing remarks, therefore, it is believed that this application is now in condition for allowance, with claims 1-8 and 14-19 presently pending. Allowance and passage to issue on that basis are accordingly respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any

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overpayment to Deposit Account No. 25-0120 for any additional
fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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APPENDIX:

The Appendix includes the following item:

- Replacement Sheets for Figures 11-15 of the drawings

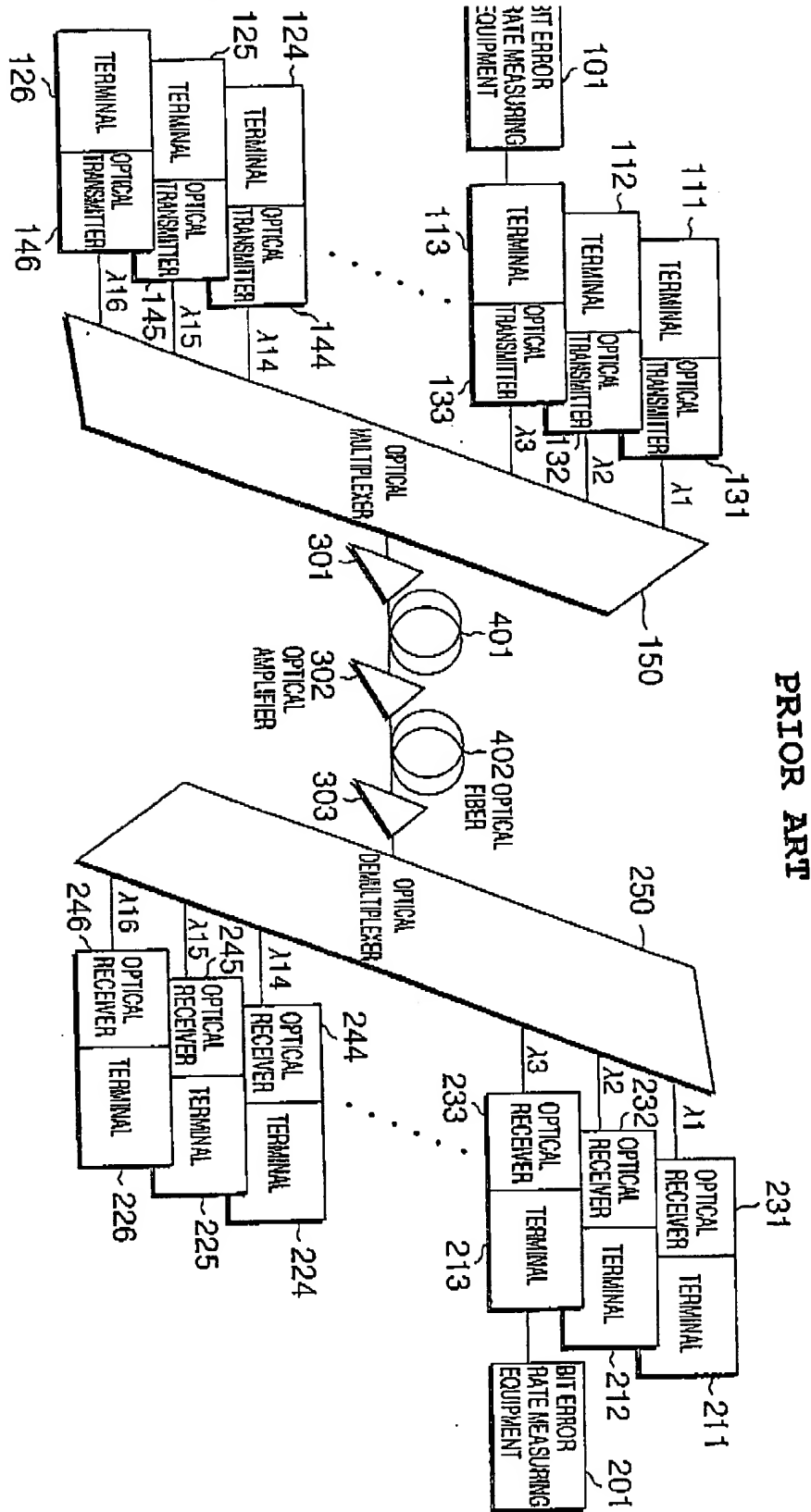


Fig. 11

PRIOR ART

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REPLACEMENT SHEET

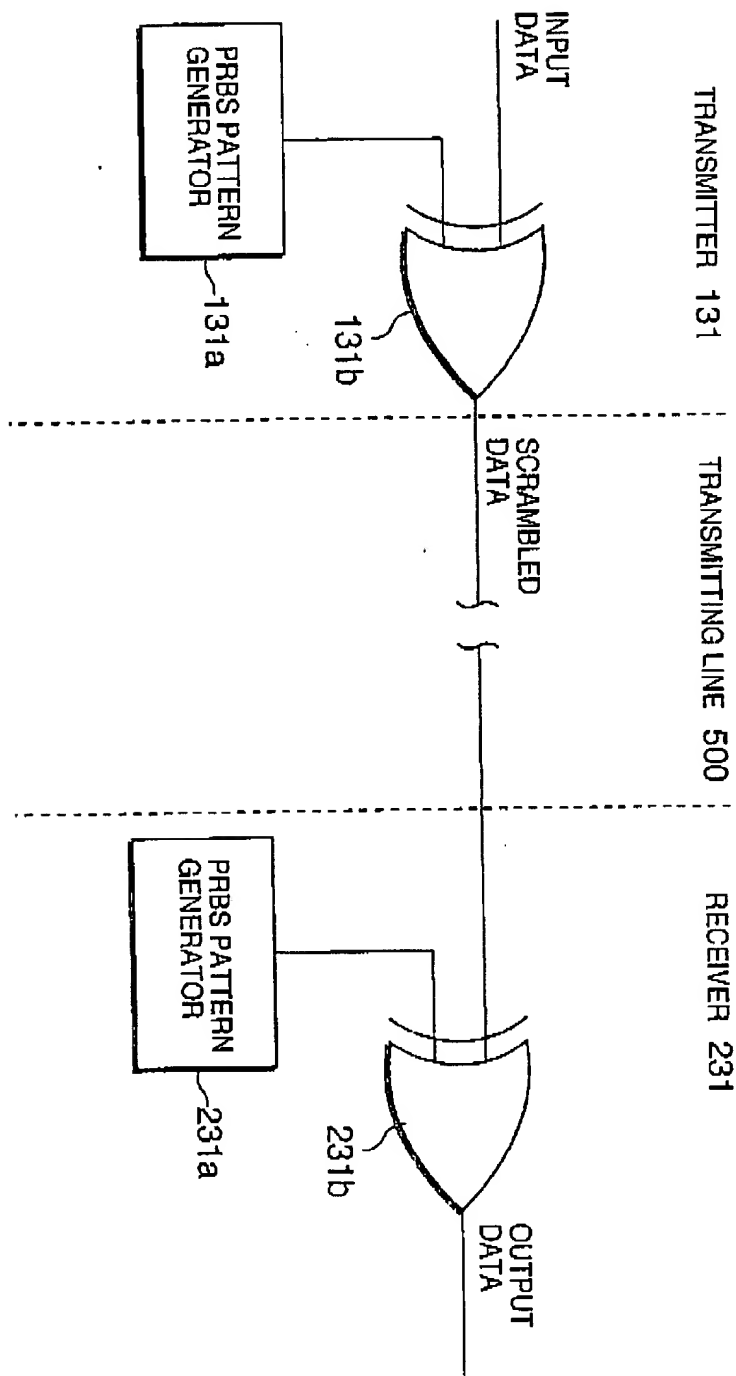
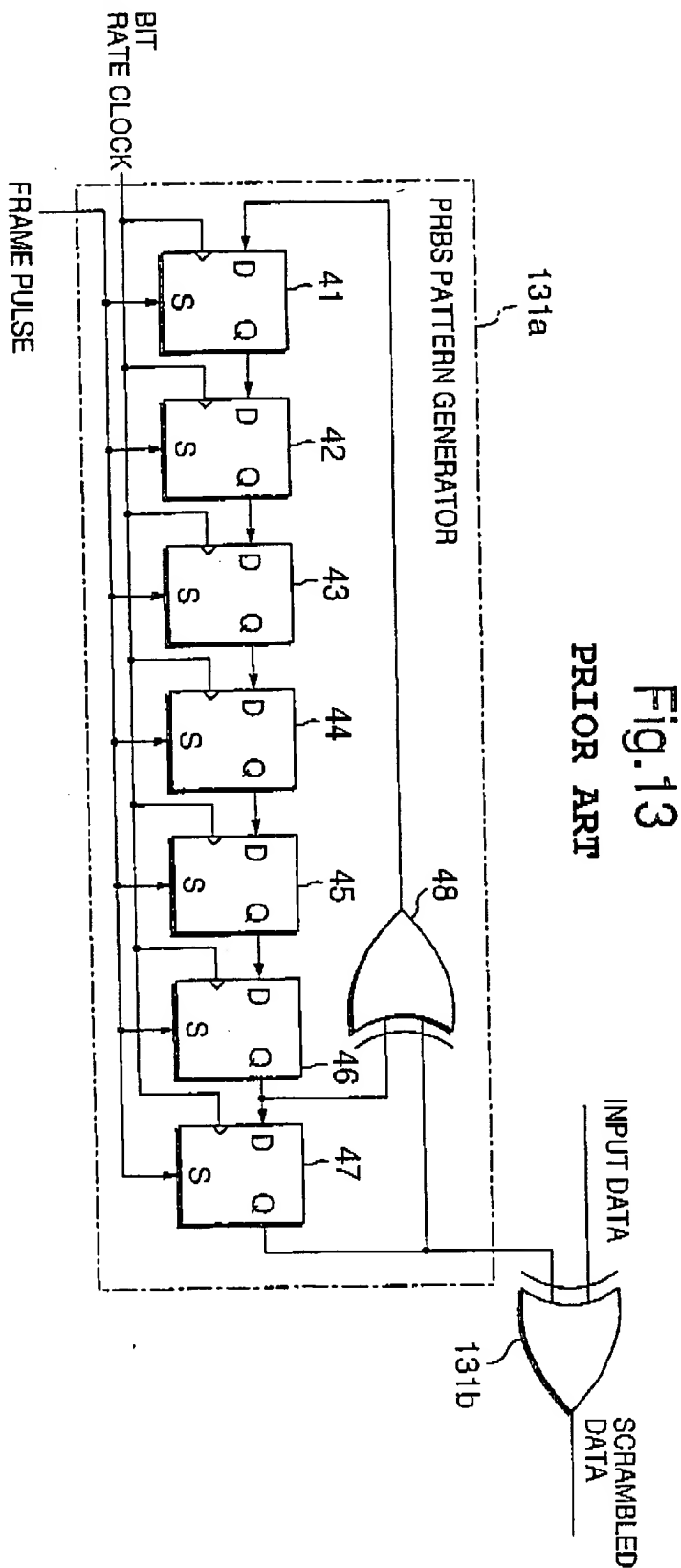


Fig.12
PRIOR ART

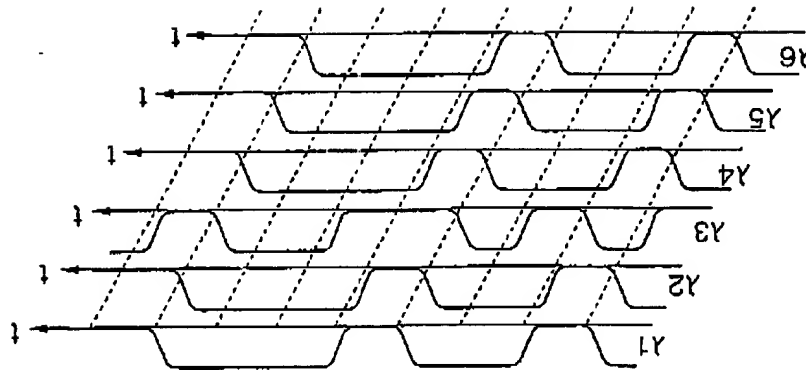
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REPLACEMENT SHEET



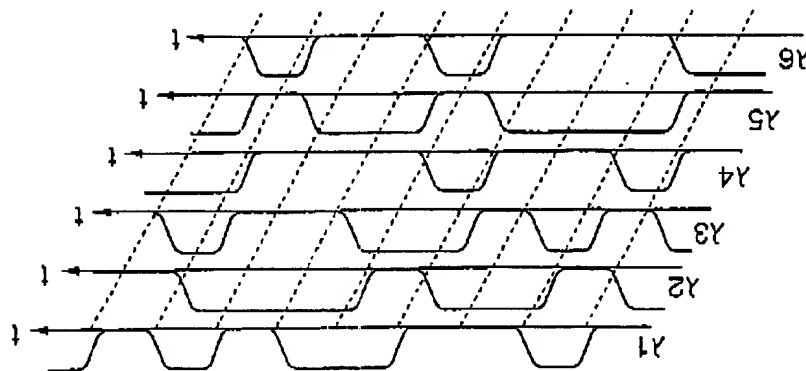
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REPLACEMENT SHEET



PRIOR ART

Fig. 15



PRIOR ART

Fig. 14

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